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Connecticut Agricultural Experiment Station.

BULLETIN No. 75.

June 11, 1883.

OBSERVANCE OF THE FERTILIZER LAW.

FACTURERS who up to June 7, 1883, have essentially complied with Sections 2 of the Act concerning Commercial Fertilizers, which went into effect September 1st, 1882.

FIRM.	ARTICLES.
and Va. Fertilizing Co., -----	The Long Islander Ammoniated Superphosphate of Lime with Potash. The Orient Complete Manure.
er & Bro., 215 Pearl St., New -----	Castor Pomace. Pelican Bone Fertilizer. A. A. Ammoniated Superphosphate. Complete Manure for Corn. Complete Manure for Potatoes. Complete Manure for Tobacco. Kainit.
Bros., Putnam, Conn., -----	Superphosphate of Lime. Bone Meal.
Fertilizer Co., 43 Chatham St., -----	Stockbridge Grain Manure. Stockbridge Vegetable Manure. Stockbridge Forage Crop Manure. Bowker's Hill and Drill Phosphate. Bowker's Brighton Phosphate. Bowker's Fish and Potash. Bowker's Fine Ground Dry Fish. Bowker's Fresh Milled Kainit.
, Mass., -----	Bradley's Superphosphate. B. D. Sea-Fowl Guano. Original Coe's Superphosphate.
Fertilizer Co., 27 Kilby St., -----	I.X.L. Castor Pomace.
, Mass., -----	Bay State Fertilizer. Great Planet "A."
Brown Oil Co., St. Louis, -----	Ammoniated Bone Superphosphate. Dissolved Bones.
Cove Guano Co., New Bedford, -----	Russell Coe's Ammoniated Bone Superphosphate.
k Coe, 16 Burling Slip, New -----	Collier White Lead and Oil Co., Castor Pomace.
Coe, Linden, N. J., -----	Ammoniated Bone Superphosphate. Potato, Hop and Tobacco Phosphate.
White Lead and Oil Co., St. -----	
By F. Ellsworth, Hartford, --	
Fertilizer and Chemical Works, -----	
Crocker, Buffalo, N. Y., -----	

The Connecticut Agricultural Experiment Station.

BULLETIN No. 75.

June 11, 1883.

OBSERVANCE OF THE FERTILIZER LAW.

MANUFACTURERS who up to June 7, 1883, have essentially complied with Sections 2 and 3 of the Act concerning Commercial Fertilizers, which went into effect September 1st, 1882.

FIRM.	ARTICLES.
Atlantic and Va. Fertilizing Co., -----	The Long Islander Ammoniated Superphosphate of Lime with Potash. The Orient Complete Manure.
H. J. Baker & Bro., 215 Pearl St., New York, -----	Castor Pomace. Pelican Bone Fertilizer. A. A. Ammoniated Superphosphate. Complete Manure for Corn. Complete Manure for Potatoes. Complete Manure for Tobacco. Kainit.
Bosworth Bros., Putnam, Conn., -----	Superphosphate of Lime. Bone Meal.
Bowker Fertilizer Co., 43 Chatham St., Boston, Mass., -----	Stockbridge Grain Manure. Stockbridge Vegetable Manure. Stockbridge Forage Crop Manure. Bowker's Hill and Drill Phosphate. Bowker's Brighton Phosphate. Bowker's Fish and Potash. Bowker's Fine Ground Dry Fish. Bowker's Fresh Milled Kainit.
Bradley Fertilizer Co., 27 Kilby St., Boston, Mass., -----	Bradley's Superphosphate. B. D. Sea-Fowl Guano. Original Coe's Superphosphate.
Robt. B. Brown Oil Co., St. Louis, -----	I.X.L. Castor Pomace.
Clark's Cove Guano Co., New Bedford, Mass., -----	Bay State Fertilizer. Great Planet "A."
E. Frank Coe, 16 Burling Slip, New York, -----	Ammoniated Bone Superphosphate. Dissolved Bones.
Russell Coe, Linden, N. J., -----	Russell Coe's Ammoniated Bone Superphosphate.
Collier White Lead and Oil Co., St. Louis. By F. Ellsworth, Hartford, --	Collier White Lead and Oil Co., Castor Pomace.
Buffalo Fertilizer and Chemical Works, L. L. Crocker, Buffalo, N. Y., -----	Ammoniated Bone Superphosphate. Potato, Hop and Tobacco Phosphate.

FIRM.	ARTICLES.
L. B. Darling & Co., Pawtucket, R. I.,--	Ivory and Bone Dust.
G. W. Dickinson, Essex, Conn.,-----	Ground Bone. Animal Fertilizer.
Dole's Common Sense Fertilizer Co., 42	Common Sense Fertilizer, No. 2. Com-
Congress St., Boston, Mass.,-----	mon Sense Fertilizer, No. 3.
Glidden and Curtis, Boston, Mass.,----	Soluble Pacific Guano.
Geo. L. Harris & Son, Eagleville, Conn.,	Pure Gr'd Bone. Pure Bone Phosphate.
Lister Brothers, Newark, New Jersey,--	Ground Bone. Potato Fertilizer. Am-
	moniated Dissolved Bone.
Manhattan Chemical Co., 276 Pearl St.,	
N. Y.,-----	Cooke's Blood Guano.
The Mapes' Formula and Peruvian Gu-	The Mapes Potato Manure. The Mapes
ano Co., 158 Front St., N. Y.,-----	Corn Manure. The Mapes Com-
	plete Manure for light soils. The
	Mapes Tobacco Manure, Connecticut
	Brand. The Mapes Tobacco Manure
	for use with stems. The Mapes Grass
	and Grain Spring Top Dressing. The
	Mapes Complete Manure, "A" Brand.
	Plain Superphosphate, <i>High Grade</i> .
The Geo. W. Miles Co., Milford, Conn.,--	I.X.L. Ammoniated Bone Superphos-
	phate. "C" Island Dry Fish Guano.
	Fish and Potash.
National Fertilizer Co., Bridgeport,	Chittenden's Complete Fertilizer for
Conn.,-----	Roots, Potatoes and Vegetables. Chit-
	tenden's Complete Manure for Grain.
	Chittenden's Ammoniated Bone Super-
	phosphate. Chittenden's Fish and
	Potash.
New Haven Fertilizer Co., New Haven,	
Conn.,-----	Ammoniated Superphosphate.
Peck Bros., Northfield, Ct.,-----	Ground Bone.
Preston Fertilizer Co., Greenpoint Sta-	Ammoniated Bone Superphosphate.
tion, Brooklyn, N. Y.,-----	Dried and Ground Fish Guano.
	Ground Bone.
Quinnipiac Fertilizer Co., New London,	Quinnipiac Phosphate. Dry Ground
Conn.,-----	Fish. Fish and Potash, crossed
	Fishes Brand. Fish and Potash,
	plain brand.
Quinnipiac Co., Wallingford, Conn.,----	Meat and Plaster. Quinnipiac Co.'s
	Bone.
Read & Co., 34 Beaver St., N. Y.,-----	Farmers' Friend Fertilizer. Matchless
	Tobacco Manure.
The Rogers & Hubbard Co., Middle-	Pure Raw Knuckle Bone Meal. Pure
town, Ct.,-----	Raw Knuckle Bone, "Fine, A."
H. L. Shoemaker, Philadelphia, by F.	
Ellsworth, Hartford,-----	Bone Meal.

FIRM.	ARTICLES.
St. Louis Lead and Oil Co. By F. Ellsworth, Hartford, -----	St. Louis Lead & Oil Co. Castor Pomace.
F. C. Slade, Oakville, Ct., -----	Ground Bone.
Paul Thompson, 238 State St., Hartford, Conn., -----	Mineral Manure for Tobacco and other Crops.
Williams, Clark & Co., 109 Pearl St., New York, -----	Fish and Potash. Universal Ammoniated Dissolved Bone. Americus Ammoniated Bone Superphosphate. Muriate of Potash. Kainit.

FERTILIZER ANALYSES.

The samples whose analyses are given in the following pages were drawn by an agent of the Station, when not otherwise stated.

NITRATE OF SODA.

928. From stock of Mapes Connecticut Valley Branch, Hartford, Ct. Stated not to be on sale in Connecticut.

941. Quinnipiac Fertilizer Co., New London, Ct. From stock of Wilson & Burr, Middletown. Sampled by J. M. Hubbard, Middletown.

ANALYSES.

	928	941
Nitrogen, -----	15.48	15.46
Equivalent nitrate of Soda, -----	94.00	93.90
Cost, -----	\$70.00	67.00
Nitrogen costs per 100 lbs., -----	\$22.61	21.67

SULPHATE OF AMMONIA.

929. From stock of Mapes Connecticut Valley Branch, Hartford, Ct. Stated not to be on sale in Connecticut.

	929
Nitrogen, -----	20.74
Equivalent sulphate of Ammonia, -----	97.78
Cost, -----	\$4.75 per 100 lbs.
Nitrogen costs per lb., -----	22.9 cents.

POTASH SALTS.

931. Muriate of Potash. H. J. Baker & Bro. From stock of Southmayd & Gardiner, Middletown, Ct.

930. Muriate of Potash. From stock of Mapes Connecticut Valley Branch, Hartford, Ct. Stated not to be on sale in Connecticut.

943. Muriate of Potash. Quinnipiac Fertilizer Co., New London. From stock of Wilson & Burr, Middletown. Sampled by J. M. Hubbard, Middletown, Ct.

932. Muriate of Potash, imported by H. J. Baker & Bro., New York; sold by S. J. Hall, Meriden; sampled by Station.

933. Acorn Brand German Potash Salts. Williams, Clark & Co., N. Y. Stock of F. Ellsworth, Hartford.

938. Kainit. H. J. Baker & Co., N. Y. Stock of H. K. Brainard, Thompsonville, Ct. Sampled by J. Thompson, Broad Brook.

940. Kainit. Bowker Fertilizer Co. Stock of H. K. Brainard, Thompsonville. Sampled by J. Thompson, Broad Brook, Ct.

937. Kainit (Leopoldshall). Stock of Mapes Branch, Hartford. Stated not to be on sale in Connecticut.

917. Kainit. Stock of Navassa Phosphate Co., N. Y. City. Sampled by J. M. Milbank, Greenfield Hill, Ct.

934. Kainit. Quinnipiac Fertilizer Co., New London, Ct. From Stock of Olds & Whipple, Hartford.

936. Kainit. From stock of Usher & Tinker, Plainville, Ct.

ANALYSES.

	931	930	943	932	933	938	940	937	917	934	936
Potash,	54.26	57.82	52.29	51.55	12.59	12.97	11.80	12.23	12.24	12.45	11.52
Equivalent Muriate of Potash,	85.94	91.58	82.82	81.65	-----	-----	-----	-----	-----	-----	-----
Equivalent Sulphate of Potash,	-----	-----	-----	-----	23.30	23.98	21.80	22.62	22.63	23.02	21.30
Cost, \$	42.00	45.00	42.00	45.00	15.00	15.00	15.00	18.00	16.00	15.00	17.00
Potash costs per 100 lbs.,	\$3.87	3.89	4.01	4.36	5.90	5.78	6.36	7.36	6.54	6.02	7.38

BONE MANURES.

939. Peter Cooper's No. 2 Bone. Sampled by Edward S. Spring, Green Farms, Ct.

884. Lister Brothers' Celebrated Ground Bone. Stock of Raymond Bros., Norwalk, Ct.

892. Slade's Ground Bone (manufacturer's sample). F. C. Slade, Oakville, Ct.

908. Ground Bone (manufacturer's sample), E. Smith, South Canterbury, Conn.

883. Wilson's Pure Bone Flour, ground by John H. Wilson, Norwalk, Ct. Stock of Raymond Brothers, Norwalk.

950. Ground Bone, made and sold by M. McNamara, Trumbull Mills, Trumbull, Ct. Sampled by J. H. Jennings, Green's Farms.

MECHANICAL ANALYSES.

		939	884	892	908	883	950
Fine,	smaller than $\frac{1}{50}$ inch,-----	35	47	17	24	19	19
Fine-medium,	" $\frac{1}{25}$ "-----	18	17	24	33	29	15
Medium,	" $\frac{1}{12}$ "-----	27	16	27	26	52	24
Coarse-medium,	" $\frac{1}{6}$ "-----	20	20	23	17	0	32
Coarse,	larger than $\frac{1}{6}$ "-----	0	0	9	0	0	10
		100	100	100	100	100	100

CHEMICAL ANALYSES AND VALUATIONS.

	939	884	892	908	883	950
Nitrogen,-----	1.67	2.41	3.97	4.38	3.92	4.03
Phosphoric acid,-----	28.99	12.55	23.52	20.86	23.61	20.32
Cost,-----	\$28.00	33.00	32.00	34.00	35.00	31.75
Estimated value per ton,-----	35.99	21.12	35.25	35.27	36.85	31.70

PLAIN SUPERPHOSPHATES.

916. Navassa Ground Acid Phosphate Rock, made by the Navassa Phosphate Co., and sampled by J. M. Milbank.

942. Acid Phosphate of Lime, made by the Bowker Fertilizer Co., New York; sold by Wilson & Burr, Middletown, Ct.; sampled by J. M. Hubbard, Middletown.

ANALYSES.

	916	942
Soluble phosphoric acid,-----	5.56	10.72
Reverted phosphoric acid,-----	6.43	1.08
Insoluble phosphoric acid,-----	4.55	2.84
Cost,-----	\$23.00	24.00
Estimated value per ton,-----	\$25.03	26.87

FISH FERTILIZERS.

900. Bowker's Fish and Potash, made by the Bowker Fertilizer Co., New York; sold by Curtis & Abbott, Birmingham, Ct.

897. Geo. W. Miles' Fish and Potash, made by Geo. W. Miles Co., Milford, Ct.; sold by Apothecaries' Hall, Waterbury.

885. Fish and Potash, Crossed Fishes Brand, made by the Quinipiac Fertilizer Co., New London, Ct.; sold by Raymond Bros., Norwalk.

ANALYSES.			
	900	897	885
Nitrogen of nitrates,-----	-----	-----	1.38
Nitrogen of ammonia salts,-----	-----	-----	.44
Nitrogen of organic matter,-----	2.52	2.64	2.48
Soluble phos. acid,-----	2.85	4.69	.83
Reverted phos. acid,-----	2.46	1.15	4.12
Insoluble phos. acid,-----	2.10	2.69	3.62
Potash,-----	4.08	3.68	4.38
Chlorine,-----	9.20	4.90	7.31
Cost,-----	\$36.00	40.00	38.00
Estimated value per ton,-----	\$27.79	30.66	35.70

SUPERPHOSPHATES, SPECIALS, &c.

904. A.A. Ammoniated Superphosphate; sold by Tolles & McEwen, Naugatuck, Ct.

920. A.A. Ammoniated Superphosphate; sold by W. R. Perry & Co., New London, Ct.; sampled by B. A. Copp, Groton, Ct.

Samples **904** and **920** were both made by H. J. Baker & Bro., New York.

901. Brighton Phosphate; made by the Bowker Fertilizer Co., New York; sold by Curtis & Abbott, Birmingham, Ct.

922. Bradley's Superphosphate of Lime; sold by Smith & Son; sampled by T. S. Gold, West Cornwall.

868. Bradley's Superphosphate of Lime; sold by Raymond & Bro., South Norwalk, Ct.; sampled by Franklin Sherwood, Green's Farms.

Samples **922** and **868** were both made by the Bradley Fertilizer Co., Boston, Mass.

896. Ammoniated Bone Superphosphate; made by the Buffalo Fertilizer and Chemical Works, Buffalo, N. Y.; sold by Ruggles & Clark, Shelton, Ct.

891. Chittenden's Universal Phosphate; made by the National Fertilizer Co., Bridgeport, Ct.

912. Menhaden Guano; made and sold by Jos. Church & Co., Tiverton, R. I.; sampled by Geo. D. Harrison, Lakeville, Ct.

924. E. Frank Coe's Ammoniated Bone Superphosphate; made by E. F. Coe; sampled by Andrew Kingsbury, Coventry, Ct.

893. Russell Coe's Ammoniated Bone Superphosphate; made by Russell Coe, Linden, N. J.; sold by Curtis & Abbott, Birmingham, Ct.

923. Ammoniated Bone Superphosphate; made by Russell Coe; sold by Smith & Sons, and sampled by T. S. Gold, West Cornwall, Ct.

887. Soluble Pacific Guano; made by the Pacific Guano Co., Boston, Mass.; sold by Raymond Bros., Norwalk, Ct.

898. Ammoniated Bone Superphosphate; made by the Geo. W. Miles Co., Milford, Ct.; sold by Apothecaries' Hall, Waterbury, Ct.

907. New Haven Fertilizer Co's Superphosphate; made and sold by the New Haven Fertilizer Co.

886. Quinipiac Phosphate; sold by Raymond Bros., South Norwalk.

921. Quinipiac Phosphate; sold by John S. Morgan, Groton, Ct.; sampled by B. A. Copp, Groton.

925. Quinipiac Phosphate; sold by W. B. Williams, Bolton Center, Ct.; sampled by Andrew Kingsbury, Coventry, Ct.

Samples **886**, **921** and **925** were made by the Quinipiac Fertilizer Co., New London, Ct.

948. Paul Thompson's Mineral Manure for Tobacco and other crops; made and sold by Paul Thompson, Hartford, Ct.

905. Special Potato Manure; made by H. J. Baker & Bro.; sold by Tolles & McEwen, Naugatuck, Ct.

903. Stockbridge Manure for Potatoes and Vegetables; made by the Bowker Fertilizer Co., New York; sold by Apothecaries' Hall, Waterbury, Ct.

895. Potato, Hop and Tobacco Fertilizer; made by the Buffalo Fertilizer and Chemical Works, Buffalo, N. Y.; sold by Ruggles & Clark, Shelton, Ct.

913. Chittenden's Complete Fertilizer for Roots, Potatoes, and Vegetables; made and sold by the National Fertilizer Co., Bridgeport, Ct.

906. Corn Manure; made by H. J. Baker & Bro., New York; sold by Tolles & McEwen, Naugatuck, Ct.

902. Stockbridge Manure for Corn; made by the Bowker Fertilizer Co., New York; sold by Apothecaries' Hall, Waterbury, Ct.

914. Chittenden's Complete Manure for Grain; made by the National Fertilizer Co., Bridgeport.

899. Stockbridge Forage Crop Manure (Grass Top Dressing); made by the Bowker Fertilizer Co., New York; sold by Apothecaries' Hall, Waterbury, Ct.

882. Tobacco Manure, Connecticut Brand; made by the Mapes' Formula and Peruvian Guano Co., New York; sold by David Beers, Danbury, Ct.

ANALYSES.

	Nitrogen of Nitrates.	Nitrogen of Ammonia Salts.	Nitrogen of Organic Matter.	Soluble Phos. Acid.	Reverted Phos. Acid.	Insoluble Phos. Acid.	Potash.	Chlo- rine.	Cost.	Estimated value per ton.
904 Baker's A.A. Ammoniated Superphosphate, -		1.88	.76	9.88	.17	.36	2.58	3.30	\$42.00	\$37.91
920 Baker's A.A. Ammoniated Superphosphate, -		1.99	.72	8.81	.68	.47	2.78	3.71	42.00	37.05
901 Bowker's Brighton Phosphate, -			1.37	6.90	1.20	1.61	1.71	3.72	40.00	26.78
922 Bradley's Superphosphate, -	.32		2.47	8.22	1.19	2.44	1.89	1.87	40.00	37.16
868 Bradley's Superphosphate, -	.45		2.33	7.97	1.30	2.56	1.97	1.77	42.00	36.88
896 Buffalo Superphosphate, -			2.87	6.20	1.18	3.14	1.16	1.35	45.00	33.49
891 Chittenden's Universal Phosphate, -	.68		1.81	7.55	.87	.83	2.60	4.37	42.00	32.26
912 Church's Menhaden Guano, -			4.96	1.83	3.24	1.10	.29		33.60	33.60
924 E. Frank Coe's Superphosphate, -			2.19	7.31	2.22	3.73			36.00	34.18
893 Russell Coe's Superphosphate, -			2.60	6.56	.78	1.42	1.20	4.52	40.00	30.36
923 Russell Coe's Superphosphate, -			2.00	6.63	1.20	1.58	1.27	2.43	40.00	28.69
887 Soluble Pacific Guano, -	.61	.17	1.82	5.08	1.73	5.66	2.54	2.60	42.00	34.59
898 Geo. W. Miles Co., Superphosphate, -			2.26	7.03	1.25	3.07	1.84	2.75	40.00	33.11
907 New Haven Fertilizer Co's Superphosphate, -	1.18		.93	5.59	.88	2.87	1.98	1.22	42.00	27.83
886 Quinmiac Phosphate, -		.52	2.48	5.81	3.11	2.31	2.02	2.15	40.00	36.36
921 Quinmiac Phosphate, -	.64		2.85	7.47	2.28	1.75	2.66	2.34	40.00	40.11
925 Quinmiac Phosphate, -	.90		1.87	2.66	5.98	3.19	2.18	2.94	40.00	33.30
948 Paul Thompson's Mineral Manure, -			.80	.16	1.12	.38	1.31	1.03	25.00	10.56
905 Baker's Potato Manure, -		2.59	.67	6.87	.67	.43	9.76	7.75	50.00	41.55
903 Stockbridge Potato and Vegetable Manure, -			2.94	5.86	.79	1.83	6.10	4.05	50.00	35.45
895 Buffalo Potato, Hop and Tobacco Fertilizer, -			2.11	6.74	.77	2.08	4.74	4.32	45.00	32.30
913 Chittenden's Complete Fertilizer for Roots, &c., -	.09		3.74	6.33	1.07	1.27	6.49	5.79	50.00	40.24
906 Baker's Corn Manure, -		3.38	.77	6.10	.40	.78	7.91	9.79	50.00	42.84
902 Stockbridge Corn Manure, -			3.83	6.63	.49	2.57	2.79	3.93	50.00	38.44
914 Chittenden's Complete Manure for Grain, -	.11		3.73	7.02	.86	1.09	5.15	4.86	50.00	40.11
899 Stockbridge Forage Crop Manure, -	1.86		2.18	5.85	.55	1.49	4.05	3.72	50.00	36.45
882 Mapes' Tobacco Manure (Connecticut Brand), -	2.98	1.86	.57	4.88	2.76	1.20	6.70	1.02	54.00	49.45

935. Castor Pomace; made by the Collier White Lead & Oil Co., St. Louis, Mo.; sold by Olds & Whipple, Hartford.

ANALYSIS.	
Nitrogen,	5.76
Phosphoric acid,	2.07
Potash,	1.03
Cost,	\$23.00
Estimated value per ton,	24.66

915. Crude Navassa Phosphate; imported and sold by the Navassa Phosphate Co., New York; sampled by J. M. Milbank, Greenfield Hill, Conn.

Phosphoric acid,	29.90
Cost,	\$17.00
Phosphoric acid, costs,	\$2.84 per 100 lbs.

PLASTER.

894. Plaster; ground by Knickerbocker Plaster Mills, New York; sold by Ruggles & Clark, Shelton, Ct.

949. Plaster; sent by Harvey Elliot, North Guilford, Ct.

ANALYSES.		894	949
Insoluble in acids,98		.51
Sulphuric acid,	52.20		52.08
Lime,			36.61
Undetermined,	1.71		.56
Hydrated sulphate of lime (gypsum),	40.94		48.88
Sulphate of lime (anhydrite, or burned plaster),	56.37		50.05
Insoluble in acid,98		.51
Undetermined,	1.71		.56
	100.00		100.00
Pure gypsum equivalent to total sulphate of lime,	112.23		111.97
Cost per ton,	\$11.50		

CORRECTION.

The valuation of H. J. Baker & Bro's. A.A. Ammoniated Superphosphate, sample No. **752**, published in Bulletin No. 70, June 30, 1882, and in Annual Report for 1882, p. 30, is incorrect. By a misplaced decimal point, the estimated value of insoluble phosphoric acid was made \$7.44 instead of \$0.74. This error was not detected in the duplicate calculation which is always performed, before the Station valuations are put on final record.

The erroneous valuation of No. **752** was \$50.43.

The correct valuation of No. **752** is \$43.53.



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